performed with snaring maneuver as a bailout in cases of coronary ostia impairment or severe prosthetic leak due to higher deployment for a suboptimal sealing of the device with valve calcifications (N=2; 28.6%). The majority of accidental embolization occurred during early experience with the new Accutrak delivery system. In 6 a second CRS in the correct position was implanted. The misplaced CRS functioned normally, with no instances of structural deterioration, thrombosis or further distal migration, and showed complete apposition against the aortic wall. Moreover, no thromboembolic events were reported in any patient.
Conclusion: CRS embolization can be effectively managed, implanting a second prosthesis in a standard fashion and leaving the misplaced device in aorta. There seem to be no long term vascular or neurological adverse events associated with device embolization or intentional relocation in experienced hands.

TCT-769

Requirement of Small Size of Prosthetic Aortic Valve in Asian Population; Implication to Select Valve Size for Transcatheter Aortic Valve Implantation in Elderly

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Background: Currently an efficacy of transcatheter aortic valve implantation (TAVI) has been proved as a less invasive treatment for high risk elderly patients with aortic stenosis in Europe and United States, and many patients received TAVI. However, there is no data regarding to appropriate size of aortic valve by TAVI in Asian population who has smaller build than those in Europe and United states. To clarify aortic annular size in Japanese patients with aortic stenosis, the following study was evaluated.
Methods: Between May 2004 and December 2008, consecutive 340 patients (male: 158, female: 182) who underwent surgical replacement of aortic valve for aortic stenosis were studied. Study subjects included tricuspid anatomy in 224 patients and bicuspid in 116 patients. Because of indication for TAVI, patients with tricuspid anatomy were evaluated by TTE (transthoracic echocardiography) and TEE (transesophageal echocardiography). We analyzed the sizes of annulus and implanted valve.
Results: Patient age was 72.9±8.4 years old (male) and 75.8±6.8 years old (female). Annulus diameter was 21.1±2.1 mm (male 22.3±1.9 mm, female 20.3±1.9 mm, p<0.001). The average annulus diameter above 75 years old also had larger size in male than female (n=42, 22.3±2.0 mm vs n=82, 20.1±1.8 mm). Implanted valve was smaller than measured annulus both in male (21.7±1.4 mm) and female (19.3±1.3 mm). Small size valve bellow 20 mm was counted in 31.5% of whole patients, and 46.3% of female elderly above 75 years old.
Conclusion: Asian population including Japanese shall need a smaller size of prosthetic aortic valve in elderly. Furthermore, considering the thickness of sewing ring of tissue valve, Euro-American population may also require a small size valve in case of value-in-valve technique.

TCT-770

FRANCE II: French registry aortic national corevalve and Edwards registry II

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Background: Transcatheter aortic valve implantation is a therapeutic alternative for high-surgical-risk patients with severe symptomatic aortic stenosis. Two models of prosthesis are currently commercialized in France, which can be implanted either via a transarterial or a transapical approach. The aim of the study was to evaluate in a national French registry the early safety and efficacy of transcatheter aortic valve replacement (AVR) using either the Edwards valves or CoreValve in high-surgical-risk patients with severe aortic stenosis.
Methods: The multicentre national registry was conducted in 33 centres between January 2010 and July 2011, under the authority of the French Societies of Cardiology and Thoracic and Cardio-Vascular Surgery. All the valves implanted in France since the study period were included. The primary endpoint was mortality at 1 month, 6month, 1 year up to 5 year.
Results: Two thousand and five hundred high-surgical-risk patients (logistic EuroSCORE ≥20%, STS ≥10%, or contra-indication to AVR) were enrolled. Mean age was 82+7 years and 43.9% were female. Edwards valves and CoreValve were implanted in 68 and 32% of patients, respectively. The approaches used were transarterial (transfemoral: 66%; subclavian: 5%) or transapical in 29%. Device success rate was xx and mortality was xx, xx, xx respectively at 30 days, 6 month and 12 month. Severe complications included stroke (xx), tamponade (xx), acute coronary occlusion (xx), and vascular complications (xx). Pacemaker was required in xx. At 1 month, xx of patients were in NYHA class II or less, xx at 6 month and xx at 1 year. All the result will be receive at the end of August 2011
Conclusion: This prospective registry reflects the real-life experience of transcatheter aortic valve implantation in high-risk elderly patients in France. This registry is the first exhaustive and consecutive registry included the 2 types of percutaneous aortic valves

TCT-771

Expanded Anatomic Suitability of Current Generation Transcatheter Aortic Balloon-Expandable Prostheses

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Background: The percentage of patients eligible for first-generation balloon-expandable Edwards SAPIEN valve (Edwards Lifesciences, Irvine, California, USA) implantation was restricted to definite aortic annulus diameters. Moreover, transfemoral implantation using this device was limited to patients with large bore iliac-femoral arteries. This study sought to assess the proportion of patients anatomically suitable for the current Edwards SAPIEN XT (ES-XT) valve using NovaFlex/E-Sheath delivery system compared with the past Edwards SAPIEN (ES) valve with RetroFlex 3 delivery system, including both transfemoral and transapical approaches.
Methods: All high surgical risk patients with severe aortic stenosis referred to our department as potential candidates for TAVI, underwent transesophageal echocardiography and angiography of aorta and iliac-femoral arteries in order to assess anatomical suitability by different approaches. The transfemoral access requirements for ES/RetroFlex 3 system were a minimal iliofemoral lumen diameter of at least 7 mm for the 22-F/23-mm device and a minimal iliofemoral dimension of at least 8 mm for the 24-F/26-mm device. The current ES-XT with NovaFlex/E-Sheath delivery system requires a minimal iliofemoral dimension of at least 6 mm for the 23 mm valve (NovaFlex 18F/E-Sheath 16F) and 6.5 mm for the 26 mm valve (NovaFlex 19F/ E-Sheath 18F). The range of annulus diameter considered amenable for implantation was 18-25 mm for the ES valve (23 and 26 mm prosthesis) and 18-27.5 mm for ES-XT valve (23, 26 and 29 mm prosthesis). Transfemoral approach was considered as the first option, if not suitable the patient was evaluated for transapical approach.
Results: Data were collected for 293 high-risk patients evaluated for TAVI. Anatomic suitability was 82% (240/293) for ES RetroFlex versus 95% (277/293) for ES-XT NovaFlex/E-Sheath. Among 240 patients eligible for ES RetroFlex, 80 (33%) were suitable for transfemoral implantation, while among 277 patients eligible for ES-XT, those suitable for tranfemoral approach were 172 (62%).
Conclusion: Using current Edwards devices the percentage of patients suitable for TAVI increases from 82% to 95%. Moreover, while only 1/3 of patients had anatomic criteria suitable for the less-invasive transfemoral approach with the previous devices, with the current Edwards SAPIEN devices this proportion increases to about 2/3 of patients.

TCT-772

Clinical Outcome following Transcatheter Aortic Valve Implantation in Patients with Impaired Left Ventricular Systolic Function

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Background: Although impaired LV function may be considered a contra-indication for aortic valve replacement, the hemodynamic characteristics of transcatheter valves may offer procedural and long-term clinical benefit in such patients. We sought to determine the prevalence of impaired LV systolic function and its impact on the in-hospital and long-term outcome in patients who underwent Transcatheter Aortic Valve Implantation (TAVI).
Methods: 230 consecutive patients underwent TAVI with the Medtronic-CoreValve System. Impaired LV function was defined by LVEF ≤35% (European Multicenter Study on Operative Risk Stratification and Long-term Outcome in patients with Low-Flow/Low-Gradient Aortic Stenosis). Study endpoints were defined according to the Valve Academic Research Consortium recommendations.
Results: Compared to patients with a LVEF >35% (n=197), those with LVEF ≤35% (n=33) were more often male (78.8 % vs. 46.7%, p<0.001), more symptomatic (NYHA class III / IV, 97.0% vs. 77.2%, p=0.008) and had a higher prevalence of prior coronary artery disease (63.6% vs. 43.1%, p=0.029). The Logistic EuroSCORE was 14.8% and 22.8%, respectively (p=0.012). No difference was observed between the 2 groups in in-hospital or 30-day mortality (3.0% vs. 9.6%, p=0.21), the Combined Safety Endpoint at 30 days (24.2% and 24.4% p=0.99) and survival free from readmission at 2 years (61.5% and 59.3%). After adjustment, LVEF ≤ 35% was not associated with an increased risk of 30-day mortality, in-hospital complications and survival free from readmission at follow-up.

POSTERS

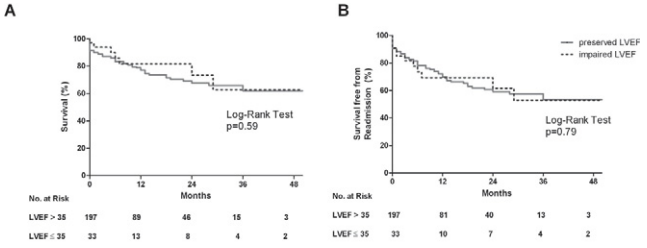

Figure 1. Kaplan-Meier Curves of patients with impaired and preserved left ventricular systolic function

Conclusion: The immediate and long-term outcome after TAVI did not differ between patients with an impaired and preserved LVEF. LVEF ≤35% did not predict adverse immediate and long-term outcome. These findings indicate that TAVI should not be withheld in patients with impaired LV function.

TCT-773

Prediction of Optimal Deployment Projections in Transcatheter Aortic Valve Replacement: Angiographic 3-Dimensional Reconstruction of the Aortic Root versus Multidetector Computed Tomography

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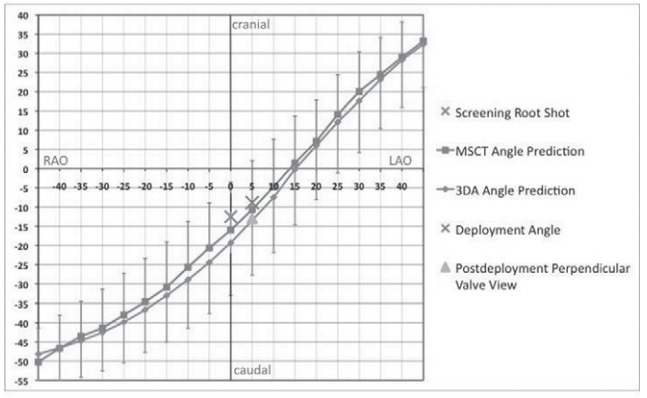
Background: Identifying the optimal fluoroscopic valve projection is important for successful transcatheter aortic valve replacement (TAVR). We compared angle predictions from 3-dimensional angiographic reconstructions (3DA) of the aortic root to those from multidetector computed tomography (MDCT).
Methods: Patients undergoing transfemoral TAVR underwent pre-implant 3DA and baseline MDCT. Two separate independent operators predicted perpendicular valve projections for each method prospectively. The angles generated from 3DA and MDCT as well as the final implant angle were compared to the post deployment perpendicular valve projection. 3DA reconstructions were generated from a 220 degree rotational aortic root angiogram during breath hold and rapid ventricular pacing. The shortest distance from the post deployment perpendicular valve projection to the regression line of predicted perpendicular valve views were calculated for every patient and method.
Results: 39 out of 40 patients had adequate image quality for reproducible angle predictions. There was a significant correlation between 3DA and MDCT for predictions of perpendicular valve projections ($r = 0.682$, $p<0.001$, figure 1). Deviation from the regression line of predicted angles to the post deployment valve view were 5.1±4.6° for 3DA and 7.9±4.9° for MDCT ($p = 0.016$). The mean deviation from the implant angle to the post deployment perpendicular valve view was 1.9±4.6° RAO/LAO and 5.1±7.2° cranial/caudal.



Conclusion: Both 3DA and MDCT are accurate and safe imaging modalities for identifying the optimal valve deployment projection in TAVR.

TCT-774

Feasibility And Safety Of Transaortic Transcatheter Aortic Valve Implantation In Patients With Previous Cardiac Surgery Using the Edwards SAPIEN Bioprosthesis

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Background: Patients with severe aortic stenosis (AS) and a history of previous cardiac surgery who require valvular intervention have an increased peri-operative risk. Transcatheter aortic valve implantation (TAVI) is increasingly popular in such high-risk patients. If peripheral vascular disease precludes transfemoral implantation (TF-TAVI), the transapical approach (TA-TAVI) is used. However this is associated with pleural disruption and compromise of the left ventricular (LV) continuity. We sought to evaluate the feasibility of the retrograde, transaortic technique (TAo-TAVI) using the Edwards SAPIEN valve as an alternative approach avoiding these problems.
Methods: 196 patients with severe aortic stenosis underwent TAVI at St Thomas' Hospital, London, between January 2008 and March 2011. 59 patients had previously undergone cardiac surgery and of these 7 patients underwent TAo-TAVI after considerations of anatomy, risk, LV function and significant respiratory disease. 6 had previous coronary artery bypass grafting (85.7%) and 1 patient (14.3%) had 2 previous cardiac operations for resection of subaortic membrane and ventricular septal defect closure. All patients with CABG had patent grafts including LIMA to LAD and saphenous vein grafts to native coronaries.
Results: In the TAo-TAVI group the age (mean±SD) was 71.5±13.5 years. 71.4% were male. Mean logistic EuroScore was 30.4±20.1. Pre-TAVI peak transaortic gradient was 84.6±36.4mmHg and fell to to 13.6±5.7mmHg immediately post-procedure ($p=0.002$). All patients underwent successful TAo-TAVI with 23mm (2/6) and 26mm (4/6) bioprostheses. There were no device related peri-procedural complications. 30-day mortality was 14.3% (1/7) for TAo-TAVI, 10.0% (3/30)for TA-TAVI and 18.2% (4/22) for TF-TAVI ($p=0.695$).
Conclusion: TAo-TAVI is a feasible option in high-risk redo patients with patent coronary grafts and may provide a preferable access route in these high-risk patients when TF-TAVI is not possible, avoiding the LV and respiratory complications of TA-TAVI.

TCT-775

Improved Procedural Results After CoreValve Implantation with the New AccuTrak Delivery System

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Background: Transcatheter aortic valve implantation (TAVI) has become an established treatment for severe aortic stenosis in patients with unacceptable high surgical risk. Recently, the new AccuTrak delivery system for improved deliverability of the CoreValve aortic bioprosthesis was launched. It has not been shown yet, if the new delivery catheter leads to optimized positioning and improved procedural outcomes.
Methods: We therefore conducted a retrospective single-center analysis comparing the procedural results after transfemoral CoreValve implantation with or without the new AccuTrak delivery system.
Results: We evaluated 70 consecutive patients (35 with the original delivery catheter and 35 with the new AccuTrak catheter) for procedural results after CoreValve implantation. The use of the AccuTrak delivery catheter resulted in significantly higher positioning of the CoreValve prosthesis (8.8 mm [7.1 to 11.2 mm] vs. 7.0 mm [5.5 to 9.4 mm]; P= 0.0068) below the annulus (median [interquartile range]). Moreover, the optimized positioning resulted in reduced rates of significant (≥ grade 2) aortic regurgitation assessed by postinterventional aortography and echocardiography (P= 0.044 and P=0.0275 respectively). Despite improved positioning, no differences in the need for permanent pacemaker implantation were observed.
Conclusion: Our retrospective analysis demonstrates improved positioning and reduced postinterventional aortic regurgitation with the new CoreValve AccuTrak delivery system. Whether this may also affect the need for permanent pacemaker insertion or longterm outcome after TAVI needs to be evaluated in larger studies.

TCT-776

Outcome of Residual Paravalvular Aortic Regurgitation (PAR) After Transfemoral Aortic Valve Implantation (TAVI) And Importance of Hemodynamic Assessment

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Background: Residual PAR after TAVI is common. However, systematic data on its severity and its clinical impact are sparse. We, therefore, thought to evaluate incidence, severity and outcome of residual PAR after TAVI.
Methods: We analyzed data from 167 consecutive TAVI patients treated with either the Medtronic-CoreValve (n=88) or the Edwards Sapien (n=79) bioprosthesis. PAR was graded angiographically according to the Sellers criteria at the end of the procedure.In addition,invasive hemodynamics post implantation(pressure difference: diastolic aortic pressure – LVEDP (PD DAP–LVEDP)) were analyzed.
Results: TAVI was technically successful in all patients with overall mortality rates of